[0039] According to an alternative embodiment of the invention according to FIG. **8**, three light modules can also be provided, wherein in comparison to the embodiment described above, a third light module is added with a light source **20**, the maximum output of which is approximately 50% of the maximum output of the respective light sources **2**, **5**. This light source **20** is operated at full load when it is operated within the tolerance band T; i.e., light source elements **7** of light source **20** are either switched on or switched off without being operated in a dimmed state. The light module operated with third light source **20** can serve, for example, for spot-like illumination of a partial region of the light distribution. If third light source **20** is to be operated in a partial-load operation, the tolerance range T is selected to be correspondingly larger.

[0040] According to a further embodiment of the invention according to FIG. **6**, the illumination device formed of the two light modules **1** and **4** can be used to generate a fine resolution light distribution **21** (light distribution) which is superimposed on high beam distribution **18** according to FIG. **5**. For this purpose, control unit **10** has a fine resolution control by means of which only light source elements **7** of light source **2** of first light module **1** are controlled or activated in the fine resolution region **22** of the light distribution in which there is a finely resolved structure (logo **23**). Light source elements **7** of light source **5** of second light module **4** are controlled such that light **12** is not emitted into the fine resolution region (logo light region **22**) but only into the adjacent region. The projection of logo **23** thus occurs exclusively by first light module **1**, which enables a correspondingly high resolution.

[0041] According to a further embodiment of the invention, control unit **10** can have an imaging error compensation control by means of which part of light source elements **7** of second light module **4** are controlled such that their emitted light is imaged by means of optical unit **6** in an edge region **24** of first illumination region A**1** in order to compensate imaging errors in first light module **1**.

[0042] Optical units **3**, **6** are preferably each designed as a lens arrangement with a number of lenses by means of which light **11**, **12** emitted by the respective light sources **2**, **5** is imaged to form the desired light distributions according to the specifications.

[0043] According to a further embodiment of the invention, control unit **10** can have a short-term control by means of which part or all of the light source elements **7** of first light module **1** are operated at a maximum light output in a predefined time window that is dependent on the maximum cooling capacity of cooling modules **9**. In the event that this maximum light output is insufficient, light source elements **7** of second light module **4** are controlled such that they compensate for the difference to the required light output in the space, delimited by light pixels L**1**, of first illumination region A**1**. Second light module **4** thus makes available the still required illumination intensity in the regions of first illumination region A**1**, which cannot be provided by first light module **1** alone. For example, a welcome light or another signal function that is only provided for a limited period of time can be realized in this way. The time window is so short that overloading cooling modules **9** is avoided.

[0044] According to a further embodiment of the invention, optical units **3**, **6** can also be controlled alternatively or in addition to light sources **2**, **4** in order to generate the different light distributions.

[0045] The invention being thus described, it will be obvious that the same may be varied in many ways. Such variations are not to be regarded as a departure from the spirit and scope of the invention, and all such modifications as would be obvious to one skilled in the art are to be included within the scope of the following claims.

What is claimed is:

1. An illumination device for vehicles, the illumination device comprising:

a first light module having a light source and an optical unit to generate a first illumination region;

a second light module having a light source and an optical unit to generate a second illumination region; and

a control unit to control the first light module and the second light module so that a larger number of light pixels are imaged in the first illumination region than in the second illumination region with respect to a surface of equal size,

wherein the light pixels of the first light module have a greater illumination intensity than the light pixels of the second light module, and

wherein the control unit acts upon the light sources of the first light module or the second light module such that when the light sources are activated, the light sources of the first and second light module are each operated with a thermal output within a tolerance band and below a maximum thermal output of the at least one light source.

2. The illumination device according to claim **1**, wherein the light source of the first light module and the light source of the second light module each have a plurality of light source elements which, depending on the light distribution to be formed in the first illumination region and in the second illumination region are operated at different levels of thermal output, the difference of which is greater than the difference between an upper output value and a lower output value of the tolerance band.

3. The illumination device according to claim **1**, wherein the upper output value of the tolerance band corresponds to 70%, preferably 65%, in particular 55% of the maximum thermal output of the first light module or the second light module.

4. The illumination device according to claim **1**, wherein the light sources of the light modules have the same maximum light output.

5. The illumination device according to claim **1**, wherein the first illumination region comprises an area on a measuring screen that corresponds to a range from 1/5 to 2/5, preferably ¼ of an area of the second illumination region on the measuring screen.

6. The illumination device according to claim **1**, wherein the first illumination region is arranged superimposed on the second illumination region.

7. The illumination device according to claim **1**, wherein the first illumination region has a horizontal width of +/−14° and a vertical height of +/−7°.

8. The illumination device according to claim **1**, wherein the light source elements of the first light source and the second light source are each arranged in a matrix-like manner such that a ratio of a horizontal width to a vertical height of the light source is in a range between 3 to 5, preferably 4.

9. The illumination device according to claim **1**, wherein the light source has at least 10,000 light source elements.